ASSIGNMENT 6

Textbook Assignment: "Maneuvering Boards," chapter 11, pages 11-1 through 11-28; "Charts, Grids, and Radar Navigation," chapter 12, pages 12-1 through 12-44.

BEFORE YOU WORK ON THE FOLLOWING MANEUVERING BOARD PROBLEMS, STUDY CHAPTER 11 CAREFULLY. PAY PARTICULAR ATTENTION TO THE TERMS, DEFINITIONS, AND PROCEDURES USED IN THE TEXT. THE QUESTIONS DO NOT NECESSARILY FOLLOW THE SEQUENCE OF THE TEXT DUE TO THE NATURE OF THE MATERIAL. ALL COURSES AND SPEEDS ARE TRUE UNLESS INDICATED OTHERWISE.

Your ship is the guide of a formation on course 175º, at speed 15 knots. Cruiser "A" bears 000ºR from you, at 20,000 yards, and is ordered to take station 090ºR at 14,000 yards from the guide.

Figure 6A

IN ANSWERING QUESTIONS 6-1 AND 6-2, REFER TO FIGURE 6A.

6-1. What speed must cruiser A make if it steers course 245º?

1. 9 kts
2. 12 kts
3. 15 kts
4. 18 kts

6-2. What course should cruiser A steer if it uses 18 knots for the maneuver?

1. 140º
2. 245º
3. 292º
4. 320º

Assume that your ship is ordered to intercept a surface contact detected at 340º, 20,000 yards, and on course 260º, at a speed of 12 knots.

Figure 6B

IN ANSWERING QUESTIONS 6-3 THROUGH 6-5, REFER TO FIGURE 6B.

6-3. What course should you steer to carry out the intercept at a speed of 20 knots?

1. 196º
2. 260º
3. 304º
4. 340º

6-4. What is the time required to intercept the contact?

1. 30.0 min
2. 32.5 min
3. 42.5 min
4. 50.0 min

6-5. What is the approximate distance, in miles, that your ship will travel to the point of intercept?

1. 6 miles
2. 9 miles
3. 11 miles
4. 14 miles

Your course is 055º, at speed 21 knots. A contact is on course 150º, at a speed of 20 knots. At 1313 the contact bears 012º at 36,000 yards. In 5 minutes, change course to the right to avoid the contact by 8,000 yards (maintain your speed).

Figure 6C

IN ANSWERING QUESTIONS 6-6 THROUGH 6-8, REFER TO FIGURE 6C.

6-6. What course must you steer?

1. 070º
2. 080º
3. 250º
4. 260º

6-7. What is the range of the contact when you begin the maneuver?

1. 28,100 yds
2. 30,800 yds
3. 35,200 yds
4. 38,400 yds

6-8. What is the time of CPA after the maneuver?

1. 1347
2. 1356
3. 1401
4. 1405

Your ship is on course 035º, at a speed of 18 knots. A surface contact is observed on the PPI scope as follows:

TIME	BEARING	RANGE
1130	035º	32,800
1144	035º	28,100

At 1153, you change course to avoid the contact by 4,000 yards on your port side. Maintain speed.

Figure 6D

IN ANSWERING QUESTIONS 6-9 THROUGH 6-12, REFER TO FIGURE 6D.

6-9. What is the contact's course?

1. 030º
2. 035º
3. 210º
4. 215º

6-10. What is the contact's speed?

1. 16 kts
2. 12 kts
3. 8 kts
4. 4 kts

6-11. What course must you steer to avoid the contact?

1. 035º
2. 040º
3. 215º
4. 220º

6-12. What will be the bearing of CPA?

1. 134º
2. 139º
3. 314º
4. 319º

6-13. Your ship is on course 320º, at a speed of 15 knots and the relative wind is 045º at 25 kts. What is the true wind?

1. 005º at 25 kts
2. 042º at 18 kts
3. 185º at 25 kts
4. 222º at 18 kts

6-14. Your ship is on course 350º at a speed of 15 knots. The true wind is from 240º at 10 knots. What is the apparent wind?

1. 060º at 10 kts
2. 131º at 15 kts
3. 170º at 15 kts
4. 311º at 15 kts

6-15. Your ship is on course 185º at a speed of 20 knots. The relative wind is 040º at 20 knots. The OOD desires to have the winds at 355º R at 30 knots, with as low a maneuver as possible. What course and speed should you recommend to obtain the desired wind?

1. 006º at 22.5 kts
2. 115º at 16.5 kts
3. 225º at 22.5 kts
4. 295º at 16.5 kts

6-16. Which of the following features are represented on a navigational chart?

1. Character of the bottom, water depth, population of seaports
2. Depth of water, character of the bottom, location of lighthouses
3. Depth of water, population of seaports, location of lighthouses
4. Depth of water, character of the bottom, population of seaports, and buoys

6-17. An imaginary line that starts at the North Pole and ends at the South Pole is known by what term?

1. Standard
2. Meridian
3. Parallel
4. Circle

6-18. For which of the following reasons is the Greenwich meridian called the prime meridian?

1. It divides the Earth in two
2. It meets the Equator at a 90º angle
3. It is the 0º, or reference meridian
4. It is crossed at its midpoint by the Equator

6-19. What is the maximum number of degrees assigned to a parallel?

1. 45º
2. 90º
3. 180º
4. 360º

6-20. Which of the following position reports is expressed properly?

1. Lat. 35º16’43"N, long. 75º40’35"S
2. Lat. 35º24’45"N, long. 75º45’12"W
3. Long. 75º23’27"S, lat. 35º40’28"E
4. Long. 75º10’20"E, lat. 35º50’20"W

6-21. On the latitude scale of a Mercator chart, 1 degree is equal to how many nautical miles?

1. 1
2. 6
3. 10
4. 60

6-22. If you are located at latitude 36º30.0’N, longitude 75º30.0’W, how many nautical miles are you from the Equator?

1. 2,190
2. 3,360
3. 4,530
4. 5,400

6-23. In the construction of a Mercator chart, the surface of the Earth is projected on a flat surface in what manner?

1. As a plane tangent to the poles
2. As a cylinder tangent to the Equator
3. As a plane tangent to the Earth’s surface other that the poles
4. As a cone tangent to the Equator

6-24. On the Mercator projection, meridians appear as what kind of lines?

1. Parallel lines whose spacing increases as longitude decreases
2. Vertical lines that are parallel and equally spaced
3. Curved lines that bend toward the point where the projection was made
4. Horizontal lines that are parallel and equally spaced

6-25. Distortion is greatest on the Mercator projection in what area(s)?

1. Along the 180th meridian
2. Along the Greenwich meridian
3. Along the equator
4. Near the poles

6-26. Charts constructed on the Gnomonic projection are often used for which of the following purposes?

1. Celestial navigation
2. Maneuvering inland
3. Plotting original surveys
4. Navigating in the polar regions

6-27. Which of the following scales provides the greatest detail on a chart?

1. 1 to 5,000,000
2. 1 to 500,000
3. 1 to 50,000
4. 1 to 5,000

6-28. For a given chart, where will you find the notation that shows whether soundings are in fathoms or feet?

1. On the back of the chart
2. Under the title of the chart
3. In the index catalog
4. In the portfolio index

6-29. What indicates the approximate position of a buoy on a chart?

1. The center of the diamond
2. A dot near the diamond
3. The lower point of the diamond
4. The upper point of the diamond

6-30. What is the most widely used grid system in the Navy?

1. World geographic reference system
2. Cartesian coordinate grid
3. Universal transverse Mercator projection
4. Polar coordinate grid

6-31. What was the Navy's original reason for adopting the Cartesian grid?

1. It was designed to be used with the Naval Tactical Data System
2. The world geographic reference system was inadequate for worldwide reporting
3. The local tactical grid was removed from the list of useable grids and had to be replaced
4. Conventional AW reporting required a more rapid means

6-32. What official establishes the grid origin or reference point for the Cartesian grid?

1. OTC
2. RCO
3. CICO
4. Navigator

6-33. Where, in relation to the reference point, should a contact designated as Red 035 025 be plotted?

1. 35 miles east and 25 miles north
2. 35 miles west and 25 miles north
3. 35 miles east and 25 miles south
4. 35 miles west and 25 miles south

6-34. The world geographic reference system (GEOREF) is most commonly used during operations involving which of the following activities?

1. Tactical maneuvers
2. Long-range air operations
3. Gunfire support
4. Close air support

6-35. The geographic location of any area, by latitude and longitude, can be converted to a grid area on what grid?

1. UTM
2. Cartesian
3. UPS
4. GEOFEF

6-36. To conduct shore bombardment or a SAR mission in hostile areas, what type of grid system should you use?

1. GEOREF
2. Cartesian
3. UTM
4. UPS

6-37. What part of the NIMA catalogs contains hydrographic products?

1. Part 1
2. Part 2
3. Part 3
4. Part 4

6-38. In the hydrographic products catalog, you should expect to find a harbor chart of Naples, Italy, in what region?

1. Region 2
2. Region 3
3. Region 4
4. Region 5

6-39. In the chart numbering system, the five-digit chart number scale has what scale?

1. Smaller than 1:2,000,000
2. Larger that 1:2,000,000,
3. Between 1:2,000,000, and 1:9,000,000,
4. 1:9,000,000 or larger

6-40. Operating areas and principal coastal charts are "B" portfolio charts.

1. True
2. False

6-41. A chart with a NIMA stock number of 24ACO24340 is what type of chart?

1. General
2. Harbor
3. Operating area
4. Coastal

6-42. Changes to charts are published weekly in what publication?

1. Bulletin Digest
2. Notice to Mariners
3. Chart Correction Updates
4. Coast Guard Chart Corrections

6-43. The summary of corrections consists of how many volumes?

1. 5
2. 2
3. 3
4. 4

6-44. In your chart correction card file, you must have a card for which of the following publications?

1. Notice to Mariners
2. Each chart not in a portfolio
3. Each portfolio
4. Each chart

6-45. On a chart correction card, which of the following letters indicate(s) a preliminary correction?

1. P
2. PC
3. PT
4. P COR

6-46. Who determines which charts are to be kept corrected to date?

1. CNO
2. Fleet commander
3. Navigator
4. Commanding officer

6-47. What type of navigation consists of locating a ship's position by using the stars and the moon?

1. Piloting
2. Dead reckoning
3. Celestial
4. Electronic

6-48. What type of navigation consists of determining a ship's position through the aid of visual ranges and bearings to objects on Earth?

1. Piloting
2. Dead reckoning
3. Celestial
4. Electronic

6-49. The pelorus is a navigational instrument used to obtain the bearings of what?

1. Celestial bodies
2. Radio stations
3. Visual landmarks
4. Loran stations

6-50. To make recommendations to the bridge regarding navigation, CIC uses information obtained from what equipment?

1. Radar only
2. Radar and the depth sounder only
3. Radar, the depth sounder, and underwater search equipment

6-51. What term is used to indicate the distance a ship moves perpendicular to its original course during a turn?

1. Set
2. Advance
3. Transfer
4. Tactical diameter

Your ship is proceeding on course 175ºT, speed 15 knots when a change of course to 200ºT is ordered, using standard right rudder. (Assume that your ship has the same turn characteristics as the ship in table 12-1 of the text).

Figure 6E

IN ANSWERING QUESTIONS 6-52 AND 6-53, REFER TO FIGURE 6E.

6-52. What is the approximate advance?

1. 90 yds
2. 190 yds
3. 245 yds
4. 320 yds

6-53. What is the approximate transfer?

1. 45 yds
2. 70 yds
3. 95 yds
4. 115 yds

6-54. Which of the following is an excellent target for the center bearing of a three-bearing fix?

1. Wooded coastline
2. Isolated rock offshore
3. Straight, low coastline
4. Prominent mountain peak

6-55. In piloting by radar, what compensation is applied to tangent bearings to allow for beam width distortion?

1. Right and left tangent bearings are decreased by half the beam width
2. Right and left tangent bearings are increased by half the beam width
3. Right tangent bearings are decreased and left tangent bearings are increased by half the beam width
4. Right tangent bearings are increased and left tangent bearings are decreased by half the beam width

6-56. What method of taking a radar fix usually provides the most accurate position of your ship?

1. Range and bearing to a single object
2. Two or more bearings
3. Two or more ranges
4. A single range

6-57. What is meant by "set and drift"?

1. Set is the ship's speed, and drift is the amount that the current adds to or subtracts from it
2. Set is the ship's true course, and drift is the amount the current changes it
3. Set is the direction in which the ship's course is altered by current and wind, and drift is the speed of the offsetting forces
4. Set is the amount the ship's speed is changed by the current, and drift is the amount the heading is changed

6-58. What is the primary task of the CIC piloting officer?

1. To conn the ship
2. To maintain the surface plot
3. To get fixes by obtaining ranges and bearings with the search radar
4. To coordinate operations of the navigation team and evaluate information

6-59. Who is responsible for providing the conn with an evaluation of fog signals reported by the lookouts?

1. Piloting officer
2. Shipping officer
3. Surface search radar operator
4. CIC watch officer

6-60. Who informs the navigational plotter when a predetermined turn range or bearing has been reached?

1. Navigation log keeper
2. Navigation PPI operator
3. Surface search radar operator
4. Fire control radar talker

6-61. Who provides range and bearing information on all shipping that will be encountered during piloting?

1. Surface search radar operator
2. Shipping officer
3. Navigation PPI operator
4. CIC watch supervisor

6-62. Who provides time marks for the navigation plotter?

1. Piloting officer
2. Fire control radar talker/recorder
3. Navigation PPI operator
4. Navigation log keeper

6-63. Before the ship enters restricted waters, the CIC officer should meet with the radar operators to discuss which of the following information?

1. Expected water currents
2. Ship's speed changes
3. Suitable radar targets
4. Estimated time of arrival

IN ANSWERING QUESTIONS 6-64 THROUGH 6-66, REFER TO FIGURE 12-31 OF THE TEXT.

6-64. At time 0702 CIC informs the lookouts of the next channel buoy that should be sighted. What are (a) the number of the buoy and (b) its approximate relative bearing?

1. (a) 21
   (b) 020º
2. (a) 23
   (b) 350º
3. (a) 25
   (b) 355º
4. (a) 26
   (b) 025º

6-65. The distance from the fix at time 0702 to the fix at time 0704 is measured and found to be 1.25 inches (scale of the chart is 1:20,000). What was the approximate ship's speed that was made good during that period of time?

1. 10.4 kts
2. 11.1 kts
3. 12.6 kts
4. 14.4 kts

6-66. What are the characteristics of the light on channel buoy number 130?

1. White, quick flashing
2. Red, quick flashing
3. White, flashing every 6-second
4. Red, flashing every 4 seconds

6-67. The arc plotted on an anchorage chart and known as the letting-go semicircle is equal in radius to what other distance?

1. The horizontal distance between the navigation radar and the hawsepipe
2. The radius of the anchorage berth
3. The diameter of the anchorage berth
4. The distance the ship will drift ahead after ringing up "all stop"

6-68. Your ship is proceeding to anchorage. The anchorage has been located on the chart and the exact drop point has been plotted. What speed should the ship be making when it reaches the drop point?

1. Slight
2. Slight headway
3. No headway

6-69. Under which of the following conditions is a vessel considered to be "not under command"?

1. It has lost its commanding officer
2. It is restricted in its ability to maneuver
3. It is unable to maneuver as required by the Rules of the Road
4. It does not have a commanding officer on the bridge

6-70. How long is a prolonged blast?

1. 2 seconds
2. 2 to 4 seconds
3. 4 to 6 seconds
4. 6 to 8 seconds

6-71. In international waters, a ship intends to change course to port. What whistle signal, if any, must it sound if it is within sight of another vessel?

1. One short blast
2. Two short blasts
3. One prolonged blast
4. None

6-72. A ship sounding five short blasts is indicating what?

1. Request for a starboard-to-starboard passage
2. Request for a port-to-port passage
3. Danger
4. It is backing

6-73. In restricted visibility, a vessel under way but not making way must sound what fog signal?

1. One prolonged blast every 2 minutes
2. Two prolonged blasts every 2 minutes
3. One short blast every 2 minutes
4. Two short blast every 2 minutes

6-74. A vessel at anchor in heavy fog is in danger of colliding with another approaching vessel. What fog signal may the anchored vessel use to alert the approaching vessel?

1. One prolonged blast
2. One short blast
3. One prolonged blast, one short blast, one prolonged blast
4. One short blast, one prolonged blast, one short blast